



May 15, 2018

**SECURITY SURVEILLANCE CAMERA SYSTEM
 FOR WATER TREATMENT PLANT
 MINIMUM SPECIFICATION**

1. Network Video Recorder – 1 unit

Type		Specification
Monitor		23.6" LCD Monitor
System Unit		
Processor		quad-core processor
Operating System		Embedded LINUX
Audio and Video		
	IP Camera Input	64 Channel
	Two-way Talk	1 Channel Input, 1 Channel Output, RCA
Display		
	Interface	2 HDMI, 1 VGA
	On Screen Display	Camera title, Time, Video loss, Camera lock, Motion detection, Recording
Recording		
	Compression	H.265,H.264,MJPEG
	Resolution	12MP, 8MP, 6MP, 5MP, 4MP, 3MP, 1080P, 1.3MP, 720P
	Record Rate	384Mbps
	Bit Rate	16Kbps ~ 20Mbps Per Channel
	Record Mode	Manual, Schedule (Regular, (Motion Detection), Alarm, Intelligent Video System),
	Record Interval	1 ~ 120 min (default: 60 min), Pre-record: 1 ~ 30 sec, Post-record: 10 ~ 300 sec
Playback and Backup		
	Playback	128 Mbps in Raid 5 Mode; 64 Mbps in single HDD Mode
	Search Mode	Time /Date, Alarm and Exact Search (accurate to second)
	Playback Function	Play, Pause, Stop, Rewind, Fast play, Slow Play, Next File, Previous File, Next Camera, Previous Camera, Full Screen, Repeat, Shuffle, Backup Selection, Digital Zoom
	Backup Mode	USB Device/Network/eSATA Device
Network		
	Interface	2 RJ-45 Ports (10/100/1000Mbps)
	Ethernet Port	2 Ethernet Ports Joint Working or 2 Independent 1000Mbps Ethernet Ports
	Network Function	HTTP, HTTPS, TCP/IP, IPv4/IPv6, UPnP, RTSP, UDP, SMTP, NTP, DHCP, DNS, IP Filter, PPPoE, DDNS, FTP, Alarm Server, IP Search (Support Dahua IP camera, DVR, NVS, etc.)
	Max. User Access	128 users
	Interoperability	ONVIF 2.4, CGI Conformant
Storage		
	Internal HDD	8 SATA III Ports, Up to 8 TB capacity for each HDD
	HDD Mode	Single, Raid 0,1,5,6,10, Support Global HDD Hot-spar000i
	Capacity	4TB 3.5" HDD Surveillance x 4 units



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2. Monitoring PC Server - 1 unit

PARTICULARS	SPECIFICATIONS
PROCESSOR	
• Base Frequency	3.7GHz
• Cores	6 Cores
• Cache	12MB
MOTHERBOARD	
• Memory Slots	4 DIMM sockets
• Max Memory Support	Up to 64GB
• Form Factor	ATX
• Onboard Ports	VGA, USB 1.0, USB 2.0
• Onboard LAN Port	RJ45, Gigabit LAN
PERIPHERALS	
• RAM SIZE	32GB
• SYSTEM DRIVE	120GB SSD x 2pc
• STORAGE DRIVE	1TB SATA HDD x 1pc
• VIDEO GRAPHICS CARD	At least 2GB
• POWER SUPPLY UNIT	650Watts 80 PLUS
DISPLAY MONITOR	At least 17inch
OPERATING SYSTEM	Licensed Windows 10 Pro
ACCESSORIES INCLUDED	Keyboard
	Mouse
	Power Cables
	AVR 3000VA 2 units

3. 3000VA Inverter – 1 unit

Type	Specification
Rated Power	3000VA/2400W
Input	
Nominal Voltage	230VAC
Frequency range	50Hz/60Hz (auto sensing)
Output	
AC Voltage Regulation (Batt. Mode)	230 VAC +/- 5%
Waveform	Pure sine wave
Surge Power	6000VA
Efficiency (Peak)	90%~93%
Battery	
Battery Voltage	24VDC
Floating Charge Voltage	27VDC
Overcharge Protection	32VDC
Battery Type	2 units of 12V 100AH

4. 1100VA UPS -1 unit

Type	Specification
Rated Power	1100VA/605W
System	
UPS System	Line Interactive UPS with Stabilizer
Control System	Microprocessor 8 bit
Load Application	
Input Voltage	220 VAC +/- 20%
Voltage Battery Mode	220 VAC
Voltage AC mode	220 VAC +/- 10%
Output Outlet	



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	Number of backup outlets	5
	Number of surge protected outlet	1
Battery		
	Type	Sealed lead acid(Maintenance free)
	Capacity	2 x 2V 7AH

5. Network Cables

Description	Qty
Cat6 FTP Outdoor Cable 23AWG	4 Rolls
Cat 6 UTP Cable 23AWG	1 Roll

6. Connectors

Description	Qty
Cat6 shielded RJ45 Connector	66 pcs
Rubber Boot	66 PCS
Patchcord Cat6 UTP Cable 1 meter	24 pcs
Terminal Box 1 Gang	3 pcs
Terminal Box 8 gang	2 pcs
keystone Jack Cat5e Shielded	18 pcs
Keystone Jack Cat6	19 pcs

7. Ethernet Surge Protector – 14 pcs

Type	Specification
Interface Connections	2 RJ45 female Connectors
ESD/EMP Protection	Absorbing Transient Current with Response to Surge Voltage from 100V/s to 1KV/μs
DC spark -over voltage	90V @ 100V/s
Maximum Impulse Spark-Over Voltage	700V @ 1KV/μs
Discharge Current	5kA (Maximum), 0.5kA (Normal)
Maximum Capacitance	1.0 pF @ 1MHz
Data Line Protection	RJ45 10/100/1000 Ethernet
IEEE 802.3af Support	

8. 3MP Bullet IP Camera -13 units

Type	Specification
Camera	
Image Sensor	1/2.8"3Megapixel progressive scan CMOS
Effective Pixels	2048(H)x1536(V)
RAM/ROM	1024MB/128MB
Scanning System	Progressive
Minimum Illumination	0.005Lux/F1.4 (Color,1/3s,30IRE)
	0.03Lux/F1.4 (Color,1/30s,30IRE)
	0Lux/F1.4(IR on)
IR Distance	Distance up to 50m(164ft)
IR On/Off Control	Auto/ Manual
IR LEDs	4
Lens	
Lens Type	Motorized /Auto Iris
Mount Type	Board-in
Focal Length	2.7~13.5mm motorized
Max. Aperture	F1.4
Angle of View	H: 101°~31°, V:54°~17°
Optical Zoom	5x
Focus Control	Motorized
Close Focus Distance	0.3m(0.98ft)

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Pan/Tilt/Rotation		Pan:0°~360°; Tilt:0°~90°; Rotation:0°~360°
Intelligence		
	Intelligent Video System	Tripwire, Intrusion, Object Abandoned/Missing
	Advanced Intelligent Functions	Face Detection, People Counting, Heat Map
Video		
	Compression	H.265+,H.265,H.264+,H.264
	Streaming Capability	3 Streams
	Frame Rate	Main Stream: 3M(1~50/60fps)
		Sub Stream: D1 (1 ~ 50/60fps)
		Third Stream: 1080P(1~50/60fps)
	Day/Night	Auto(ICR) , Color , B/W
	BLC Mode	BLC,HLC,WDR(140dB)
	White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
	Flip	0°/90°/180°/270°
	Privacy Masking	Off / On (4 Area, Rectangle)
Network		
Ethernet		RJ-45 (100/1000Base-T)
	Protocol	HTTP;HTTPS;TCP;ARP;RTSP;RTP;UDP;SMTP;FTP;DHCP;DNS;DDNS;PPPOE;IPv4/v6
	Interoperability	ONVIF, PSIA, CGI
	Streaming Method	Unicast / Multicast
Interface		
	Video Interface	1 Port(For adjustment only)
	Audio Interface	1/1 channel In/Out
	Alarm	2 channel In: 5mA 5VDC
		1 channel Out: 1A 30VDC / 0.5A 50VAC
Standards		
	Ingress Protection	IP67
	Vandal Resistance	IK10

9. 3MP Dome IP Camera -1 units

Type		Specification
Camera		
	Image Sensor	1/2.8" 3Megapixel progressive scan CMOS
	Effective Pixels	2048(H)x1536(V)
	RAM/ROM	1024MB/128MB
	Scanning System	Progressive
	Minimum Illumination	0.005Lux/F1.4 (Color,1/3s,30IRE)
		0.03Lux/F1.4 (Color,1/30s,30IRE)
		0Lux/F1.4(IR on)
	IR Distance	Distance up to 50m(164ft)
	IR On/Off Control	Auto/ Manual
	IR LEDs	4
Lens		
	Lens Type	Motorized /Auto Iris
	Mount Type	Board-in
	Focal Length	2.7~13.5mm motorized
	Max. Aperture	F1.4
	Angle of View	H: 101°~31°, V:54°~17°
	Optical Zoom	5x
	Focus Control	Motorized
	Close Focus Distance	0.3m(0.98ft)
Pan/Tilt/Rotation		Pan : 0°~355°; Tilt : 0°~65°; Rotation : 0°~355°
Intelligence		



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	IVS	Tripwire, Intrusion, Object Abandoned/Missing
	Advanced Intelligent Functions	Face Detection, People Counting, Heat Map
Video		
	Compression	H.265+,H.265,H.264+,H.264
	Streaming Capability	3 Streams
	Frame Rate	Main Stream: 3M(1~50/60fps)
		Sub Stream: D1 (1 ~ 50/60fps)
		Third Stream: 1080P(1~50/60fps)
	Day/Night	Auto(ICR) , Color , B/W
	BLC Mode	BLC , HLC , WDR(140dB)
	White Balance	Auto/Natural/Street Lamp/Outdoor/Manual
	Flip	0°/90°/180°/270°
	Privacy Masking	Off / On (4 Area, Rectangle)
Network		
	Ethernet	RJ-45 (100/1000Base-T)
	Protocol	HTTP;HTTPs;TCP;ARP;RTSP;RTP;UDP;SMTP;FTP;DHCP;DNS;DDNS;PPPOE;IPv4/v6
	Interoperability	ONVIF, PSIA, CGI
	Streaming Method	Unicast / Multicast
Interface		
	Video Interface	1 Port(For adjustment only)
	Audio Interface	1/1 channel In/Out
	Alarm	1 channel In: 5mA 5VDC 1 channel Out: 1A 30VDC / 0.5A 50VAC
Standards		
	Ingress Protection	IP67
	Vandal Resistance	IK10

10. 4 Ports HPoE Switch with Gigabit Uplink – 4 units

Type		Specification	
Power			
	Power Supply Type	Power Adapter	
	Power Adapter Voltage	DC48V-57V	
Network Connector			
	Network Port	1~4 ports of PoE switch support IEEE802.3af/at	
		Uplink port:10/100/1000Mbps Ethernet port	
		SFP:1000Mbps optical fiber SFP module port	
		Transmission Distance	1-4 port: 100m
		Transmission Medium	Cat5/5e/6 standard network cable
	PoE protocol	IEEE802.3af/at	
Network Switch			
	Package Buffer	1M	
	MAC address list	8k	
LED Status Indicator			
	Power Indicator	2	
	Optical port LED indicator	2fiber link green lights indicate fiber working status	
	Uplink Ethernet port LED indicator	RJ45 port indicates network working status	



11. 5 ports Smart Gigabit switch – 1 unit

Type	Specification
CPU Nominal frequency	880MHz
10/100/1000 Ethernet ports	5 ports
Max Power consumption	5W
Number of USB ports	1 port
PoE in	1 port
Power Jack	1 port
Supported input voltage	6V – 31V
Storage type	Flash
Storage size	256MB

12. 24 ports Smart Gigabit Switch – 1 unit

Type	Specification
CPU frequency	600MHz
CPU core count	1 core
Size of RAM	128MB
No. of Ethernet ports	24 ports of 10/100/1000mbps
No. of USB ports	1 port
Supported input voltage	8V – 28V
No. of PoE in	1 port
No. of SFP ports	1 port
Serial ports	RJ45
Storage type	NAND
Storage size	128MB

13. Server data Cabinet (Floor Standing Cabinet 32U) – 1 set

Specifications	
Material	cold rolled steel
Loading Capacity	Static loading 800kg
Degree of protection	IP20
Accessories	
Horizontal Wire Management with cover 2U	1 unit
Universal PDU 19 inches 1U 6 ways	1 unit
1U Cantilever Shelf	1 unit
Modular Patch Panel	1 unit

14. Outdoor cabinet – 2 units

Type	Specification
Enclosure Type	Wallmount Outdoor Enclosure
Dimension	14" W x 8" D x 16" H
Door Type	Swing-out front door with TEE Lock

15. Installation and Other Materials

Guy Wire ¼
T.W. Solid Wire G12 3 rolls
PDX wire G12
2 Gang outlets 3 slots universal
Ground Rod
Galvanized Grounding Clamp
Male Plug
Electrical Tape
GI Wire
Turn Buckle



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Porcelain Wire Holder Spaghetti tube grab adhesive 100g Ply board (3/4) PVC clamp Expansion seal with log screw
Quantity is based on actual installation conditions

NOTE:

1. Refer to the attached camera assignment layout for the installation of camera.
2. Installation shall include the setup, cabling, configuration and/or programming of the complete system.
3. Schematic Diagram, Configurations, Full admin user account shall be turned over to the direct end user and all other accessories that come with the equipment.
4. User training for basic use and features.
5. Test for one (1) month continuous operation.
6. *Installation and equipment shall come with one (1) year warranty.*

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